Kansas Department of Health and Environment

Division of Environment

Bureau of Air

REGULATORY IMPACT STATEMENT CONSISTING OF:

I. ENVIRONMENTAL BENEFIT STATEMENT

AND

II. ECONOMIC IMPACT STATEMENT

Pursuant to K.S.A. 77-416

PROPOSED ADOPTION OF NEW AIR QUALITY REGULATIONS

K.A.R. 28-19-712 through K.A.R 28-19-712d

AND

K.A.R. 28-19-713 through K.A.R. 28-19-713d

September 11, 2009

Background of Proposed New Regulations

Introduction

The Kansas Department of Health and Environment (KDHE) is proposing two new sets of regulations, Kansas Administrative Regulation (K.A.R.) 28-19-712 through 28-19-712d, regarding idle reduction of heavy-duty diesel vehicles, and K.A.R. 28-19-713 through 28-19-713d, pertaining to the reduction of nitrogen oxides (NO_x) emissions. These rules are being implemented to reduce air pollution emissions from mobile and stationary sources in the Kansas portion of the Kansas City Maintenance Area (KCMA) for ozone. The KCMA includes Johnson and Wyandotte counties in Kansas, and Jackson, Clay and Platte counties in Missouri. KDHE is proposing these rules to ensure continued healthful air quality in Kansas City and to meet the national ambient air quality maintenance requirements of the federal Clean Air Act (CAA) for ozone. The proposed regulations apply only to Johnson and Wyandotte counties in Kansas.

Statutory and Regulatory Background

The federal CAA requires the U.S. Environmental Protection Agency (EPA) to promulgate National Ambient Air Quality Standards (NAAQS) for each air pollutant for which air quality criteria have been published. To date, NAAQS have been promulgated for six criteria pollutants: ozone, particulate matter, sulfur oxides, nitrogen oxides, carbon monoxide, and lead. If an area fails to achieve the standard for any criteria pollutant, the CAA requires the respective state to develop and carry out a State Implementation Plan (SIP), which describes how the state will manage its air resources to attain, and to then maintain air quality within the national standards. To measure whether the state achieves the NAAQS for ozone, the EPA created a one-hour ozone standard in 1979, and later replaced it with an 8-hour ozone standard in 1997.

Under the one-hour ozone standard in 1979, the EPA determined the KCMA to be a non-attainment area for ozone pursuant to Section 107 of the CAA. The State of Kansas prepared and implemented a revision to the SIP for the attainment of the NAAQS for ozone.

Upon demonstration to the EPA in 1991 that the area had achieved the one-hour NAAQS for ozone, the EPA changed the KCMA's designation to attainment in 1992. When an area that has previously been designated as nonattainment meets the standard, a maintenance plan is

required by Section 175A of the CAA, which defines how the state will maintain healthful air quality within the national standard for the next ten years. The plan prepared to meet this requirement was the SIP revision for the one-hour standard entitled "Kansas City (KC) Ozone Maintenance Plan". The plan required the state to include contingency measures which would be implemented if a subsequent violation occurred for the one-hour ozone NAAQS.

Violations of the one-hour ozone standard occurred in 1995 and again in 1997 in the KCMA. These violations triggered the KC Ozone Maintenance Plan's contingency measures. As part of the contingency plan, the state adopted K.A.R. 28-19-79 on May 2, 1997, which lowered the volatility of gasoline in Johnson and Wyandotte counties from 7.8 psi Reid vapor pressure (RVP) to 7.2 psi RVP during the "ozone season", the period from June 1 through September 15 of each year. In early 1999, the EPA determined that the volatile organic compound (VOC) reductions realized by the 7.2 psi RVP gasoline and other control measures were insufficient to meet the VOC reductions required by the contingency measures of the KC Ozone Maintenance Plan (64 FR 3896, January 26, 1999). To further decrease VOC emissions from gasoline, the state revoked K.A.R. 28-19-79 and adopted K.A.R. 28-19-719 on April 27, 2001. The new regulation lowered the volatility of gasoline in Johnson and Wyandotte counties from 7.2 psi RVP to 7.0 psi RVP during the period of June 1 through September 15 of each year.

KDHE also adopted regulations controlling stationary source VOC emissions by implementing K.A.R. 28-19-717 (effective December 12, 2000) to control VOC emissions from commercial bakery ovens, and K.A.R. 28-19-714 (effective September 1, 2002) to control VOC emissions from solvent metal cleaning. Both K.A.R. 28-19-717 and 28-19-714 are only applicable to Johnson and Wyandotte counties.

The Kansas City one-hour Ozone Maintenance Plan component of the SIP had to be reviewed in 2002 as required under the CAA ten-year period review provision. Fundamental to that SIP update was the incorporation of an updated KCMA emissions inventory.

In early 2005, another SIP revision was required because the EPA changed the standard used to monitor ozone levels from a one-hour standard to an 8-hour standard. The revision updated the previously approved 2002 KC Ozone Maintenance Plan to replace the one-hour standard with the new 8-hour standard, and also updated the related contingency measure triggers. Although the one-hour standard was revoked, the EPA stated, "The maintenance plan

requirements will remain enforceable as part of the approved SIP until such time as EPA approves a SIP revision removing such obligations." (69 FR 23985)

In June of 2005, the EPA formally re-designated the KCMA from "unclassifiable" to "attainment" for the 8-hour ozone NAAQS. The Phase I Implementation Rule for the 8-hour ozone standard promulgated in April 2004 required that former one-hour maintenance areas, such as the KCMA, prepare and submit no later than June 15, 2007, a plan under Section 110 of the CAA to maintain the 8-hour ozone standard for a ten-year period from the date of designation.

On June 15, 2007, under the authority of the Kansas Air Quality Act, K.S.A. 65-3001 through 65-3028, the state revised the original ozone SIP and submitted a new Section 110(a)(1) maintenance plan to the EPA entitled "Kansas City 8-Hour Ozone Maintenance Plan". The plan provided for the continued maintenance of the 8-hour ozone NAAQS for ten years from the effective date of the KCMA's designation as unclassifiable for the 8-hour ozone standard. The plan also included contingency control measures that would be implemented as a result of a violation of the 8-hour ozone standard. The EPA suggested that for control measures, contingency plans should be implemented that effectively, "at minimum, ensure that any violation of the 8-hour ozone standard is promptly corrected." The EPA also suggested the plan assure the contingency measures are adopted expeditiously once they are triggered. Under the Kansas City 8-Hour Ozone Maintenance Plan that the EPA approved on October 9, 2007, the proposed Phase I contingency measures include a heavy-duty diesel truck idle reduction regulation and a nitrogen oxides (NO_x) reduction regulation for both Johnson and Wyandotte counties.

The state of Missouri enacted 10 CSR 10-2.385, "Control of Heavy Duty Diesel Vehicle Idling Emissions", effective February 28, 2009, which applies to the Missouri portion of the KCMA (Jackson, Clay and Platte counties).

Rule Description

K.A.R. 28-19-712 through 28-19-712d, regarding idle reduction of heavy-duty diesel vehicles, apply to all owners and operators of commercial, public and institutional diesel vehicles in Johnson and Wyandotte counties having a gross vehicle weight rating (GVWR) greater than

14,001 pounds. The proposed idle reduction regulations do not address vehicles that combust gasoline or natural gas. The proposed rules impact heavy-duty diesel vehicles by limiting their idling to no more than 5 minutes in any 60 minute period, unless the vehicle meets one of the exemptions included in the rulemaking. Exemptions include situations where vehicles are subject to excessive idling due to road traffic, used in an emergency capacity, subject to specified inspections, used for agriculture operations, etc. The proposed rules also include a requirement that owners and operators of load and unload locations limit the idling of heavy-duty diesel trucks to no more than 30 minutes in any 60 minute period.

K.A.R. 28-19-713 through 28-19-713d, pertaining to the reduction of nitrogen oxides emissions, apply to owners and operators of stationary source facilities located in Johnson and Wyandotte counties that emit NO_x in an amount equal to or greater than 1,000 tons/year of total emissions[1] for the entire facility, based on the average of total emissions for the 2005, 2006, and 2007 calendar years. No owner or operator of an emission unit subject to the rules may allow or permit NO_x to be emitted in excess of specified emission limits. The proposed regulations further require owners and operators to install, operate and maintain such equipment as necessary to achieve the limits, and to demonstrate compliance using a certified continuous emission monitoring system (CEMS).

I. Environmental Benefit Statement

1) Need for proposed amendments and environmental benefit likely to accrue.

a) Need

On August 9, 2007, the quality-assured violation of the 8-hour ozone NAAQS in Kansas City triggered the Phase I contingency measures of the Kansas City 8-Hour Ozone Maintenance Plan. The purpose of these proposed sets of regulations, K.A.R. 28-19-712 through 28-19-712d and K.A.R. 28-19-713 through 28-19-713d, is to provide conformity with the EPA-approved Kansas City 8-Hour Ozone Maintenance Plan. To ensure these contingency measures are implemented expeditiously, the idle reduction and NO_x reduction requirements must be

[1] As defined in the proposed regulations, the total emissions shall be the sum of the actual emissions and the potential-to-emit emissions for each calendar year. If the actual emissions are more than 1,000 tons of nitrogen oxides for each calendar year, the potential-to-emit emissions may be excluded from the total emissions calculation. The potential-to-emit emissions shall be used for periods exceeding two weeks of operational inactivity due to maintenance, construction, or modification.

incorporated into the Kansas Air Quality Regulations. If these measures are not enacted in a reasonable time frame, the EPA has the discretion to reexamine the KCMA's current status as an 8-hour ozone attainment area. Since Kansas City has recorded violations of the 8-hour ozone standard, the area could be re-designated to nonattainment, thus requiring additional resources to develop a new plan, potentially including more contingency measures, to show that the area can achieve acceptable ozone levels under the current 8-hour ozone standard.

KDHE possesses authority to implement the proposed regulations under K.S.A. 65-3001 through K.S.A. 65-3028. More specifically, K.S.A. 65-3010 grants KDHE the authority to establish emission control requirements for specific geographic areas.

b) Environmental benefit

VOCs and NO_x are emitted by the evaporation and combustion of fossil fuels, which react in the atmosphere to form ground-level ozone when sufficient heat and sunlight are present. Despite increasingly efficient emission controls on motor vehicles and certain industrial processes, the increased use of fossil fuels for transportation, power generation, and heating homes and businesses has increased the amount of ozone measured at ground level. As ground-level ozone concentrations increase, serious health problems can develop, including asthma, bronchitis, increased susceptibility to respiratory infections, and decreased lung function. Those individuals most susceptible are children, active individuals of all ages, the elderly, and individuals with heart and lung disease. Small quantities of ground-level ozone can irritate the eyes, nose and throat. To alleviate the formation of ground-level ozone in the Kansas City area, emissions of VOCs and NO_x need to be reduced. Two types of sources that release these compounds are mobile and stationary sources. K.A.R. 28-19-712 through 28-19-712d, regarding idle reduction of heavy-duty diesel vehicles, were developed to address emissions from mobile sources, and K.A.R. 28-19-713 through 28-19-713d, pertaining to the reduction of nitrogen oxides emissions, to address emissions from large stationary sources. Both sets of regulations apply only in Johnson and Wyandotte counties.

i) <u>K.A.R. 28-19-712 through 28-19-712d (Idle Reduction of Heavy-Duty Diesel Vehicles)</u>

Exhaust from motor vehicles is a key component of ozone and can cause serious health effects in the surrounding community. Vehicle idling emits significant amounts of air pollutants, including NO_x, VOCs, carbon monoxide and particulate matter. In addition to ozone precursors, particulate matter emitted from idling engines also poses serious health risks. Particulate matter from diesel and gasoline engines consists of very fine particles, that when inhaled, can penetrate deep into the lungs and even into the blood stream, causing severe health problems. The individuals most susceptible are children, the elderly, and people with respiratory ailments. Fine particles have been shown to cause lung damage, aggravate respiratory conditions, increase heart disease, lead to cancer, and can contribute to premature death.

The idle reduction requirements in K.A.R. 28-19-712 through 28-19-712d are designed to decrease these contaminants by reducing idling. These requirements benefit the community by protecting public health and the environment by reducing emissions, as well as providing lower fuel costs and additional safety aspects to truck owners and operators. This regulation serves as a balance between no idling and that which is necessary to provide a safe and healthy environment for truck drivers. Several exemptions are included in the rulemaking to accommodate for situations where idling may be necessary.

A single heavy-duty over-the-road diesel truck may idle over 2,000 hours per year. These trucks typically weigh over 33,000 lbs, and are usually equipped with sleeper berth compartments. The proposed regulations would allow idling during government-mandated rest periods. Drivers will be required to reduce idling times while loading and unloading. Reducing emissions through any means will decrease the levels of ozone and fine particulate in the air, which will lower the risk of associated health problems.

Commercial delivery trucks vary in weight, but are generally less than 33,000 lbs and can idle numerous hours while making deliveries. Delivery truck drivers may need to park and find the right person to process paperwork, obtain a dock assignment, wait in line for their turn at the loading dock, then wait again while the goods are unloaded/loaded onto their trucks, check the load, and/or complete more paperwork when they are done. This process can take several hours and some vehicles may idle the entire time. Many smaller delivery vehicles will idle for lesser

periods ranging from ten minutes to one hour. Utility vehicles may also idle for up to several hours during cold weather to allow workers to warm up after coming down from utility poles or coming out of manholes. Service vehicles may idle during the driver's lunch period, especially during times of cold, hot and/or inclement weather.

According to data collected by the Kansas Department of Revenue (KDOR)[2], as of February 2008 there were a total of 7,623 commercially or publically owned trucks with a gross vehicle weight over 14,001 pounds in Johnson and Wyandotte counties. These are the trucks that sometimes idle in the situations listed above. The idle reduction regulations being proposed will decrease unnecessary idling, thus reducing the pollution emitted into the air. The following table is a summary of those vehicles registered in Johnson and Wyandotte counties for which this rule may apply. In addition, Attachment A is a table containing all of the registered trucks in these two counties and examples of the different classes of trucks including descriptions and pictures for clarification.

Kansas Registered Heavy-Duty Vehicles			
Vehicle Classification		Vehicle Ownership	
KDOR Label on Tag	Gross Vehicle Weight (lbs)	Business	Political Subdivision
16M	16M (14,001-16,000)	1,304	205
20M	20M (16,001-20,000)	867	55
24M	24M (20,001-24,000)	1,130	72
26M	26M (24,001-26,000)	768	22
30M	30M (26,001-30,000)	870	61
36M-74M	36M-74M (30,001-85,501)	1,926	343
* Includes all trucks (diesel and gas).	TOTAL:	*6,865*	*758*

ii.) <u>K.A.R. 28-19-713 through 28-19-713d (Reduction of Nitrogen Oxides)</u>

Air pollutants are continuously released from various stationary sources combusting fossil fuels. Under previous attempts to control ozone in the Kansas City area, NO_x has never been addressed specifically, as VOCs were the only regulated ozone precursor. The NO_x reduction regulations, K.A.R. 28-19-713 through 28-19-713d, are proposed in order to reduce

[2] Includes all diesel and gasoline engine trucks registered with the Kansas Department of Revenue for Johnson and Wyandotte Counties.

ozone precursors and to meet the NAAQS. K.A.R. 28-19-713 through 28-19-713d are targeted at sources with total NO_x emissions (actual plus potential-to-emit) greater than 1,000 tons/year. The limit of 1,000 tons/year was established in the contingency control measures within the Kansas City 8-Hour Ozone Maintenance Plan. Regulating larger facilities will produce more cost effective emission reductions than would be achieved by regulating numerous smaller facilities.

There are a total of three facilities in Johnson and Wyandotte counties that would be impacted by the proposed NO_x reduction regulations. Two are power generating facilities, and the remaining one is a flat glass manufacturing plant.

The two power generating facilities are Nearman Creek Power Station and Quindaro Power Station, both of which are owned by the Kansas City Board of Public Utilities (BPU). Both are located in northeastern Wyandotte County. The three-year averages of NO_x actual emissions from 2005 through 2007 for Nearman Creek Power Station and Quindaro Power Station are 4,164 tons/year and 3,471 tons/year, respectively. Since the averages for each of these facilities is over 1,000 tons/year, both will be subject to the proposed regulations. When K.A.R. 28-19-713 through 28-19-713d are implemented, the combined NO_x emissions from these two sources will be reduced by approximately 2,948 tons/year (8.08 tons/day).

The flat glass manufacturing facility is AGC Flat Glass North America, located near Spring Hill in southern Johnson County. The three-year average of NO_x total emissions (actual emissions, plus potential emissions to fill gaps due to extended periods of inactivity) from 2005 through 2007 for this facility is greater than 1,000 tons/year, thus making it subject to the proposed regulations. When K.A.R. 28-19-713 through 28-19-713d are implemented, emissions are projected to be reduced by approximately 292 – 487 tons/year (0.8 – 1.33 tons/day), depending on the control technology implemented.

2) **When applicable, a summary of the research indicating the level of risk to the public health or the environment being removed or controlled by the proposed rules and regulations or amendment.**

Section 109 of the CAA directs the EPA Administrator to set the NAAQS for each of the criteria pollutants at levels "the attainment and maintenance of which... are requisite to protect

the public health." The EPA conducted thorough research on the health effects of the criteria pollutants in order to establish the current NAAQS.

3) **If specific contaminants are to be controlled by the proposed regulations or amendment, a description indicating the level at which the contaminants are considered harmful according to current available research.**

As noted above, the determination to enforce the NAAQS has been made at the federal level through extensive research and the state rules are no more stringent than the federal requirements.

II. Economic Benefit Statement

1) **Are the proposed regulations or amendments mandated by federal law as a requirement for participating in or implementing a federally subsidized or assisted program?**

Yes. The proposed regulations are an indirect requirement for participating in a federally subsidized program, as these regulations are required under the EPA-approved Kansas City 8-Hour Ozone Maintenance Plan. Compliance with the plan is necessary, as KDHE's Bureau of Air is the lead state agency implementing the CAA, and receives significant federal funds for program activities.

2) **Do the proposed amendments exceed the requirements of applicable Federal law?**

No. Although the state is not currently mandated by a federal idle reduction or a federal NO_x reduction regulation, Section 110(a) of the CAA requires states to implement a plan to achieve and maintain compliance with the NAAQS. Kansas met this requirement by creating the Kansas City 8-Hour Ozone Maintenance Plan. Under the plan, if an area violates the 8-hour ozone standard, the contingency measures must be implemented. The contingency measures created in the maintenance plan are the proposed sets of regulations K.A.R. 28-19-712 through 28-19-712d and K.A.R. 28-19-713 through 28-19-713d.

The language for the idle reduction regulation was based on the EPA's Model State Idling Law[3], and is not more stringent than the language suggests. Further, the EPA has already approved the Kansas City 8-Hour Ozone Maintenance Plan, along with the proposed contingency control measures. Therefore, the proposed regulations must be adopted to ensure the state is in compliance with the provisions of the CAA.

3) Description of costs to agencies, to the general public and to persons who are affected by, or are subject to, the regulations:

a) <u>Capital and annual costs of compliance with the proposed amendments and the persons who will bear those costs.</u>

i) <u>K.A.R. 28-19-712 through 28-19-712d (Idle Reduction of Heavy-Duty Diesel Vehicles)</u>

The proposed idle reduction regulations impose no new capital or annual costs to KDHE or other regulatory agencies. The owners and operators of regulated diesel vehicles will save money by conserving fuel that would otherwise be wasted during idling, as well as reduce truck maintenance costs due to the prevention of engine wear caused by idling.

The proposed regulations require the owner of a load or unload location to limit engine idle time to 30 minutes or less in any 60-minute period. As such, the owner of the load or unload location may need to provide electrical hookups for truck drivers, or an area for truck drivers to remain while their truck is waiting to load or unload, especially if a truck is not equipped with idle reduction technology.

Examples of idle reduction technology include battery-electric auxiliary power systems, vehicle-battery systems, thermal energy storage systems, fuel-fired heaters, and auxiliary power units. Costs for onboard idle reduction technologies vary, with the greatest expense being incurred by installing an auxiliary power unit (APU).

An APU provides heat, air conditioning, engine warming and electricity to components of heavy-duty diesel vehicles. K.A.R. 28-19-712d(h) allows for an APU to be used as an alternative to idling. The cost of an APU can be up to $10,000. Argonne National Laboratory

[3] *Model State Idling Law*, EPA 420-S-06-001, April 2006. A copy has been provided in Attachment B.

has developed a calculator to estimate the savings realized by reducing idle time, as well as the amount of time needed to recover the initial investment of an APU. The Excel calculator can be found on the Internet at http://www.transportation.anl.gov/downloads/idling_worksheet.xls. Calculator printouts, utilizing different scenarios for idle times and APU costs, are provided in Attachment C. For convenience, summaries of the calculations are provided in the chart below:

Engine Idle Time Per Year	Cost of APU	Price of Diesel Fuel	Realized Annual Idle Savings	Time needed to recover initial APU investment
1,000 hours	$6,000	$2.65/gallon	$1,612	3.7 years
1,000 hours	$9,000	$2.65/gallon	$1,612	5.6 years
1,500 hours	$6,000	$2.65/gallon	$2,468	2.4 years
1,500 hours	$9,000	$2.65/gallon	$2,468	3.6 years
2,000 hours	$6,000	$2.65/gallon	$3,324	1.8 years
2,000 hours	$9,000	$2.65/gallon	$3,324	2.7 years
2,500 hours	$6,000	$2.65/gallon	$4,180	1.4 years
2,500 hours	$9,000	$2.65/gallon	$4,180	2.2 years

ii) K.A.R. 28-19-713 through 28-19-713d (Reduction of Nitrogen Oxides)

The proposed nitrogen oxides reduction regulations impose no new capital or annual costs to KDHE or other regulatory agencies; however, two BPU power generating facilities and one flat glass manufacturing facility will be required to add controls to their facilities to meet the emission limitations specified in the rules.

During the 2007 analysis of Nearman Creek Power Station under the federal Clean Air Visibility Rule, BPU indicated the emission limits contained in the proposed regulations could be achieved by installing new low NO_x burners with overfire air and neural network. According to BPU estimates, this control technology has a capital cost of $11,680,000, an annual operating and maintenance cost of $368,000, and a cost effectiveness of $750 per ton reduced (based on a 20 year equipment life). At Quindaro Power Station, the most cost effective technology available is low NO_x burners with overfire air. According to 2004 data in AirControlNet v4.1, this technology would have an estimated capital cost of $5,207,504, an estimated annual operating and maintenance cost of $157,458, and an estimated cost effectiveness of $868 per ton reduced (based on a 15 year equipment life).

The remaining affected facility is AGC Flat Glass North America. Since they have not previously been required to install NO_x emission controls, they have not determined the type of control technology needed. Potential control options include low NO_x burners, selective non-catalytic reduction (SNCR), and oxy-firing.

When utilizing 2004 data in AirControlNet v4.1, low NO_x burners have an estimated capital cost of $1,351,763, an estimated annual operating and maintenance cost of $99,281, and an estimated cost effectiveness of $1,014 per ton reduced. SNCR has an estimated capital cost of $1,558,915, an estimated annual operating and maintenance cost of $427,559, and an estimated cost effectiveness of $1,073 per ton reduced. Oxy-firing has an estimated capital cost of $9,568,763, an estimated annual operating and maintenance cost of $2,181,394, and an estimated cost effectiveness of $2,754 per ton reduced.

Estimates for SNCR and oxy-firing for flat glass manufacturing are also available from the Office of Industrial Technologies at the U.S. Department of Energy[4]. They estimate SNCR has a cost effectiveness of $1,382 per ton reduced, and that oxy-firing has a cost effectiveness of $2,352 per ton reduced.

b) Initial and annual costs of implementing and enforcing the proposed amendments, including the estimated amount of paperwork, and the state agencies, other governmental agencies or other persons or entities who will bear the costs.

i) K.A.R. 28-19-712 through 28-19-712d (Idle Reduction of Heavy-Duty Diesel Vehicles)

No additional costs are anticipated in adopting this idle reduction rule; it is expected that costs associated with the implementation and enforcement of this regulation will be absorbed by existing resources. The affected local governments' contractual obligations to KDHE concerning air quality will be reprioritized to emphasize the need for public outreach, education and compliance assistance to facilitate the implementation of this rule.

[4] U.S. DOE, *Technology Success Story: Glass, Oxygen-Enriched Air Staging,* Office of Industrial Technologies, http://www1.eere.energy.gov/industry/glass/pdfs/airstaging.pdf, April 2002.

ii) K.A.R. 28-19-713 through 28-19-713d (Reduction of Nitrogen Oxides)

The proposed adoption of the NO_x reduction rules will impose no new costs or paperwork burdens upon state agencies, other governmental agencies or other persons as a result of implementation. No additional inspections are planned for the covered facilities beyond those currently conducted on an annual basis.

c) Costs which would likely accrue if the proposed regulations are not adopted, the persons who will bear the costs and those who will be affected by the failure to adopt the regulations.

Since the 8-hour ozone standard was violated in the KCMA, the rules that are being proposed are the contingency measures required in the Kansas City 8-Hour Ozone Maintenance Plan. If these regulations are not incorporated into the state regulations, Kansas will be in violation of the maintenance plan that was approved by the EPA. If no action is taken on the approved maintenance plan measures, the EPA has the authority to re-designate the KCMA to non-attainment status, which would impose stricter standards and regulations than those currently being proposed. Finally, the EPA could independently enforce the Kansas City 8-Hour Ozone Maintenance Plan.

d) A detailed statement of the data and methodology used in estimating the costs used in the statement.

The economic impact information contained herein has been obtained from the EPA's website, as well as from websites of other state agencies that have already adopted idle reduction laws. The Kansas Department of Revenue provided information regarding the number of heavy-duty diesel trucks in Johnson and Wyandotte counties. The emission control technology information regarding BPU facilities was provided by their consultant for Nearman Creek Power Station, and by AirControlNet v4.1 for Quindaro Power Station. The emission control technology estimates for AGC Flat Glass North America were obtained from AirControlNet v4.1 and from the Office of Industrial Technologies at the U.S. Department of Energy.

e) Description of any less costly or less intrusive methods that were considered by the agency and why such methods were rejected in favor of the proposed regulations.

i) K.A.R. 28-19-712 through 28-19-712d (Idle Reduction of Heavy-Duty Diesel Vehicles)

This approach to mobile source emission reductions was determined to be the least costly and intrusive method considered to achieve the needed emission reductions.

ii) K.A.R. 28-19-713 through 28-19-713d (Reduction of Nitrogen Oxides)

The proposed NO_x reduction rule is the best option because of its large impact. Although there are numerous stationary sources in the Kansas portion of the KCMA that produce NO_x emissions, only two sources have actual emissions of more than 1,000 tons/year. All other facilities, except AGC Flat Glass North America, emit less than 300 tons/year at each site or are already controlled due to Best Available Control Technology (BACT). To achieve the level of emission reduction necessary to comply with the NAAQS, it is more efficient and cost effective to regulate larger sources than to regulate numerous smaller sources. The regulations also remove the financial burden on smaller facilities of purchasing control measures that would be imposed if all NO_x emitting sources were regulated.

f) Consultation with League of Kansas Municipalities, Kansas Association of Counties, and Kansas Association of School Boards.

Copies of the proposed regulations and regulatory impact statement have been provided to the Kansas League of Municipalities, Kansas Association of Counties, and Kansas Association of School Boards.

g) Public outreach.

KDHE has solicited input from stakeholders in the KCMA prior to proposing these regulations. A number of workgroups and meetings have been held with sources that may be impacted by the proposed regulations. These meetings provided individuals and companies the

opportunity to discuss their reactions to the proposed contingency control measures. It has also allowed KDHE the opportunity to communicate goals and plans for various contingency control measures. Full public participation has been allowed and encouraged prior to this proposed adoption. Of course, the rulemaking process will include publication of notices, an opportunity for public hearing and other measures required by state regulations.

ATTACHMENT A

Johnson and Wyandotte Table

Vehicle Classification				Vehicle Ownership		
KDOR Label on Tag	Gross Vehicle Weight (lbs)	DOT GVWR	Examples	Individual	Business	Political Subdivision
12M	0-6000	Class 1	Light Pickups: Toyota Tacoma GMC Sonoma Ford F-150	2	-	1
	12M 6,001-10,000	Class 2	3/4 Ton Pickups: Nissan Titan Ford E-250	0	3	1
	12M 10,001-12,000	Class 3	Med-Heavy Pickups: Ford F-350 GMC Sierra 3500 Delivery Vehicles	83,857	16,050	2,005
14M	14M 12,001-14,000			-	-	2
16M	16M 14,001-16,000	Class 4	Ford F-450 GMC W4500	889	1,304	205
20M	20M 16,001-20,000	Class 5 (16,001-19,500)	International MXT GMC Topkick C4500	522	867	55
24M	24M 20,001-24,000	Class 6 (19,501-26,000)	International Durastar	577	1,130	72
26M	26M 24,001-26,000			205	768	22
30M	30M 26,001-30,000	Class 7 (26,001-33,000)	International Transtar 8500 Dumptrucks	137	870	61
36M-74M	36M-74M 30,001-85,501	Class 8 (33,000 and Up)	Semi Trucks	601	1,926	343
* Includes all trucks (diesel and gas).			TOTAL:	*2,931*	*6,865*	*758*

U.S. Department of Transportation Vehicle Classification

ATTACHMENT B

United States
Environmental Protection
Agency

Air and Radiation

EPA420-S-06-001
April 2006

Model State Idling Law

EPA420-S-06-001
April 2006

Model State Idling Law

Transportation and Regional Programs Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

MODEL STATE IDLING LAW

I. BACKGROUND

In May, 2004, at the National Idle Reduction Planning Conference in Albany, New York, representatives from the trucking industry identified the inconsistent pattern and design of state and local vehicle idle restriction laws as a barrier to greater implementation of idle reduction technologies. According to the trucking industry, the patchwork of state and local idling laws and the impracticality of the provisions of these laws make knowledge, understanding, and ultimately compliance an issue for truck drivers and owners. Approximately 15 states and dozens of local jurisdictions have idling laws. In response to their concerns, the Environmental Protection Agency (EPA) hosted a series of five public workshops.

The goal of the workshops was twofold: (1) Develop a model state idling law for states to consider adopting that would foster greater compliance through common understanding of the requirements and ease of implementation; and (2) Raise awareness among the trucking industry, states, and environmental groups about each other's needs. For example, states and environmental groups want diesel emission reductions, and truck drivers want to rest comfortably and drive safely.

Existing idle reduction laws served as a starting point for discussion at the workshops hosted by EPA around the country in 2005. The workshops were held in Baltimore, MD; Atlanta, GA; Chicago, IL; San Francisco, CA; and Hartford, CT. Participants had an opportunity to discuss the provisions of these laws, add or modify them, and generally improve the framework of the laws. The language included in this model law represents the majority views expressed by the participants.

EPA is not promulgating any type of regulation regarding vehicle idling. EPA's role is limited to that of a facilitator on behalf of the Federal government to respond to the trucking industry's request to better involve the trucking industry in the development of idle reduction laws and achieve greater compliance with such laws. This model law does not represent the views of EPA or any other Federal department or agency concerning whether any state should, or should not, adopt the model law. Instead, the model law should be considered informational in nature.

II. MODEL STATE IDLING LAW WITH DISCUSSION COMMENTS

General: The model law is divided into eight sections. For purposes of better understanding, each section here includes a summary of some of the discussion points and comments made at the workshops. The model state idling law, without workshop comments, is also included in Section III.

Section D: General Requirement for Vehicles
Section E: Exemptions
Section F: Conditional Exemptions
Section G: Auxiliary Power Units
Section H: Penalties

Section A: PURPOSE: The purpose of this law is to protect public health and the environment by reducing emissions while conserving fuel and maintaining adequate rest and safety of all drivers of diesel vehicles.

> *Discussion*: Many participants expressed concern that current idle restriction laws were passed to reduce vehicle emissions or noise while ignoring other important benefits. These participants want the law to also recognize, as its purpose, that reducing vehicle idling conserves fuel and potentially improves the truck driver's rest and safety. Many felt that the trucking industry's needs or views were not represented in past idle restriction laws, and inclusion of such needs and views would improve the law's effectiveness.

Section B: APPLICABILITY: This law applies to commercial diesel vehicles which are designed to operate on highways (as defined under 40 CFR 390.5), and to locations where commercial diesel vehicles load or unload (hereinafter referred to as "load/unload locations").

> *Discussion*: This model law only addresses diesel vehicles because the majority of the emissions impacts and fuel consumption is from long duration idling diesel vehicles. Participants generally agreed that the law should apply to diesel vehicles. These participants pointed out that diesel engines emit more harmful emissions than gasoline engines. Some participants also voiced the need to include gasoline engines as a growing segment of the vehicle idling population, especially with the increase in remote start technology which is likely to result in more light-duty vehicle idling emissions. States and local jurisdictions are welcome to modify this model to include gasoline engines. Some participants expressed the concern that diesel delivery and service vans used in commercial applications are the source of much idling emissions. These participants preferred weight classifications as a limiting factor, and recommended ranges from a minimum of 8,500 pounds to 10,000 pounds. General agreement was reached on using the term "commercial diesel vehicles" as a means of including the majority of long duration idling diesel vehicles.

Section C: GENERAL REQUIREMENT FOR LOAD/UNLOAD LOCATIONS: No load/unload location owner shall cause vehicles covered by this rule to idle for a period greater than 30 minutes while waiting to load or unload at a location under their control.

> *Discussion*: The objective of this section is to strike a balance between truck drivers and facility owners of load/unload locations. It would create a mutual responsibility to reduce truck idling. Participants expressed a strong desire to address the issue of idling while waiting at load/unload locations (e.g., distribution centers, retail stores, ports, and other

similar facilities), where truck drivers will idle their engines to maintain cab comfort while waiting to load or unload. Many truck drivers noted that it is often logistics problems at the load/unload locations that create long wait times, and during this period they need to idle to maintain their comfort. They believe that they should not be solely responsible for idling in these cases. In fact, they indicated that by holding the load/unload locations accountable for causing these delays, changes might be put into place which would result in less waiting, and therefore less truck idling. States and local jurisdictions view long lines of idling trucks as a significant source of emissions, which is of concern especially if the load/unload location is near residential housing. Consequently, many participants wanted similar language encouraging load/unload locations to adopt technologies or behaviors to reduce idling. Load/unload location operators can improve their logistics system for processing truck loading and unloading, implement a call-in system when trucks are ready to be processed, or provide a waiting room for truck drivers until they are ready to be processed. Where the cause of the long wait times is due to load/unload location owner behavior, and not due to forces outside of their control (e.g., weather), then the load/unload location owner should bear some of the responsibility to implement measures to reduce idling.

Note, the language in this section applies to facilities that "cause" idling while trucks are waiting to "load or unload." This language does not apply to truck stops or plazas because truck drivers do not load or unload at these locations. Moreover, truck stop owners or operators are not "causing" a truck driver to idle. This section is limited to load/unload location owners that "cause" idling due to their own behavior. Participants considered and rejected adding the term "permit" idling as part of the location owner's liability. The rationale for rejecting this term was based on the need to address the underlying reason for queue idling which was found to be, at times, an active behavior on the part of the facility owner. "Permit" idling confers a passive situation which is not necessarily linked with any action on the part of the facility owner.

Section D: GENERAL REQUIREMENT FOR VEHICLES: No owner or operator of a vehicle shall cause or permit vehicles covered by this rule to idle for more than 5 minutes in any 60 minute period except as noted in sections E and F, and except as provided in section C in the case of a load/unload location.

Discussion: Most idle restriction laws have a general time limit, but the rationale for the time limit is usually not explained or understood. In this case, it was noted that some exemptions found in other idling laws require no more than five minutes of engine idling to accomplish certain tasks. This section attempts to bundle some exemptions under the umbrella of a general time limit. For example, warming-up or cooling-down a diesel engine in moderate weather takes only about five minutes (in extreme weather conditions the truck owner or driver should invest in an alternative device to keep the engine and fuel warm, and should not rely on the main engine for this function). Similarly, the required pre-trip inspection requires an air brake pressure test which typically takes less than five minutes of engine idling. The rest of the inspection can be conducted without the engine operating. If a state or local jurisdiction would rather create specific

exemptions for engine conditioning or pre-trip inspection, they can add these sections as additional exemptions. However, the majority of participants felt that fewer exemptions make for easier compliance and enforcement because it promotes greater consistency and understanding of the requirement. This section includes the term "permit" idling. The rationale for including this term here but rejecting it for load/unload facility owners is that the truck owners retains greater control over their drivers and the operation of their vehicles.

Section E: EXEMPTIONS: Section D does not apply for the period or periods where:

1. A vehicle idles while forced to remain motionless because of on-highway traffic, an official traffic control device or signal, or at the direction of a law enforcement official.

Discussion: Participants recognized the need for this exemption as it involves a situation outside the truck driver's control. Participants recommended adding "on-highway" to avoid allowing trucks queuing at a distribution center (off the highway) from claiming this exemption. Queuing and distribution centers are addressed under Section C: GENERAL REQUIREMENT FOR LOAD/UNLOAD LOCATIONS.

2. A vehicle idles when operating defrosters, heaters, air conditioners, or installing equipment solely to prevent a safety or health emergency, and not as part of a rest period.

Discussion: This exemption was originally advanced during the workshops to allow idling for the safe operation of the vehicle during adverse weather conditions. However, many workshop participants felt that this language was too broad and created many loopholes. This subsection was therefore revised to require that the idling be necessary to prevent a safety or health emergency (e.g., school bus breaks down in cold weather and idles to keep its occupants warm), so as to differentiate this need from cabin comfort needs during a truck driver's rest period.

3. A police, fire, ambulance, public safety, military, other emergency or law enforcement vehicle, or any vehicle being used in an emergency capacity, idles while in an emergency or training mode, and not for the convenience of the vehicle operator.

Discussion: Some participants in the conferences cautioned that this exemption could potentially be abused under the guise of public service. Therefore, language was specifically inserted to ensure that the vehicle must be in an emergency or training mode for the exemption to apply.

4. The primary propulsion engine idles for maintenance, servicing, repairing, or diagnostic purposes if idling is required for such activity.

Discussion: Similar to the emergency exemption above, workshop participants recommended language guarding against abuse. Therefore, the language indicates that

idling must be "necessary" for the exemption to apply. Interpreting what is "required" is a mechanical or electrical function of the activity, so its interpretation is rather narrow.

5. A vehicle idles as part of a state or federal inspection to verify that all equipment is in good working order, provided idling is required as part of the inspection.

Discussion: During the workshops, there was general agreement on this exemption with language indicating that idling is required for the inspection.

6. Idling of the primary propulsion engine is necessary to power work-related mechanical or electrical operations other than propulsion (e.g., mixing or processing cargo or straight truck refrigeration). This exemption does not apply when idling for cabin comfort or to operate non-essential on-board equipment.

Discussion: Workshop participants agreed that "power take-off" operation is a valid exemption. Participants wanted to guard against using this exemption to operate air conditioning, heating, microwaves, or televisions as an electrical operation (all of which would be considered non-essential on-board equipment) during rest periods, so it was necessary to add the last sentence.

7. An armored vehicle idles when a person remains inside the vehicle to guard the contents, or while the vehicle is being loaded or unloaded.

Discussion: While many would consider this a common sense exemption, like the emergency vehicle exemption above, many participants felt it was important to articulate these exemptions to ensure appropriate interpretation and enforcement by law enforcement officials.

Section F: CONDITIONAL EXEMPTIONS: Subsection D does not apply for the period or periods where:

1. A passenger bus idles a maximum of 15 minutes in any 60 minute period to maintain passenger comfort while non-driver passengers are on-board. The exemption expires (x) years after implementing a state financial assistance program for idle reduction technologies or strategies.

Discussion: Participants felt that passenger buses needed to keep passengers warm or cool while on-board. Some participants argued for 30 minutes as the time needed to condition the bus, but the majority felt that this was excessive and that 15 minutes was sufficient. Others wanted temperature ranges, but the majority felt that ambient temperatures did not reflect interior temperatures, which may be affected by solar intensity. Almost everyone agreed that the driver should not be allowed to idle just for his/her own needs, but that passengers had to be on-board. The time period for the sunset provision should be established by the state/local legislative body. The issue of a sunset

provision is explained below in subsection (2), and a list of financial assistance programs is in Section IV.

2. An occupied vehicle with a sleeper berth compartment idles for purposes of air conditioning or heating during rest or sleep period, until (x) years after implementing a state financial assistance program for idle reduction technologies or strategies, whereupon this exemption expires.

Discussion: All participants felt that this model law should balance the needs of states and industry. In a common theme for the conditional exemptions with a sunset provision, participants agreed that both the trucking industry and states have responsibilities toward reducing idling. Simply passing a state law and placing the financial burden on the trucking industry was not enough, according to trucking industry participants.

The compromise advanced in this provision is for both sides to contribute toward reducing idling. The trucking industry would evaluate, select, and purchase an idle reduction technology; and the state would assist the trucking industry with the purchase by creating a financial assistance program, such as those that currently exist in Minnesota, Arkansas, Pennsylvania, and Oregon. These states, as well as others, are assisting the trucking industry with purchasing idle reduction technologies through grants and loans. These states are in the position to say that since they are helping the industry; therefore the industry should not be idling during their rest or sleep period while in theses states.

Since this issue is a matter for states to decide in the context of various competing priorities, the EPA does not take a position on whether exemptions should be made conditional on the enactment and implementation of a state financing program. This is inherently a matter for states to decide in their legislative process.

Under the provision, the sleeper berth exemption would expire after a set period of time in states that provide some kind of financial assistance program. The set period of time should take into account the state's financial resources and legislative concerns, as well as the trucking industry's need for time to evaluate and select an idle reduction technology. More information about different types of loan programs is provided in Section IV. Under this provision, if a state offers no financial assistance, in any form, then the sleeper berth exemption could stay in effect. The theory underlying this provision is that while laws may serve as a deterrent to idling, the effectiveness of a law may be enhanced with some kind of financial program to assist with the purchase and deployment of an idle reduction technology. This view was not shared by all workshop participants. Some states argued that since the idle reduction devices pay for themselves over time, the industry should simply buy them. Others argued that this view should take into account the fact that idle reduction technologies (e.g., auxiliary power units) may require significant up front capital costs. For example, where an average truck owner-operator earns $30,000 in net annual income, the upfront $7,000 cost of an auxiliary

power unit may prevent the purchase of this technology even though the unit will pay for itself in a relatively short period.

In addition, financial assistance can increase the deployment of idling reduction technologies which are not directly funded by vehicle owners. For example, EPA has awarded grants to study, evaluate, and deploy idle reduction systems with trucking fleets and in many states, and estimates that the Agency's grant awards of $6.5 million has leveraged $15 million in additional resources. Conversely, it can be argued that without some kind of financial assistance program, truck owners may simply pay the fine as a cost of doing business and take their chances on lack of enforcement.

EPA does not have a formal position with respect to the type of financial assistance that states may want to provide, or with respect to the eligibility or user requirements for any financial assistance program.

Participants in the workshops indicated that a loan program could move states and industry closer toward achieving the goals of emission reductions and fuel conservation. It was argued that, by offering a loan instead of a grant, states are in a position to recoup their expenditures. One often cited concern of the trucking industry is that financial assistance programs not be limited to in-state trucking companies only. The industry argued that a loan program should apply to any trucking company traveling through the state since freight truck activity and any emission reductions potentially affects the air quality of multiple states.

3. An occupied vehicle idles for purposes of air conditioning or heating while waiting to load or unload, until (x) years after implementing a state financial assistance program for idle reduction technologies or strategies, whereupon this exemption expires.

Discussion: Many trucking industry representatives blamed their idling on facility owners. This conditional exemption recognizes the need to deploy idle reduction technologies or strategies (e.g., waiting room) for trucks that idle while loading/unloading. Some participants believed that queue idling requires a joint truck driver-facility owner response. Consequently, Sections C (GENERAL REQUIREMENTS FOR LOAD/UNLOAD LOCATIONS) and H (PENALTIES) address location owners.

As with other conditional exemptions, EPA does not take a position as to whether conditional exemptions should be dependent on financial assistance and believes that the matter of state financing is inherently a matter for individual states to decide.

4. A vehicle idles due to mechanical difficulties over which the driver has no control; PROVIDED that the vehicle owner submits the repair paperwork or product receipt (by mail; within (x) days) to the appropriate authority verifying that the mechanical problem has been fixed.

Discussion: Many participants felt that simply exempting a vehicle for mechanical problems was open for abuse because of the difficulty of verifying the claim without potentially harming the truck engine if the claim was accurate. The solution, as recommended by the participants, is to have the truck owner/driver submit the proper paperwork indicating that the mechanical problem was fixed to dismiss the ticket. This approach is already used for similar types of infractions. Some participants cited the additional administrative burden, but the situations where a truck must remain idling (e.g., problem with alternator) are so rare that it would not be overly burdensome to manage.

Section G: AUXILIARY POWER UNITS: Operating an auxiliary power unit, generator set, or other mobile idle reduction technology as a means to heat, air condition, or provide electrical power as an alternative to idling the main engine is not an idling engine.

(1) Operating an auxiliary power unit or generator set on all model year 2006 or older commercial diesel vehicles is permitted.

(2) *[Reserved for sub-section on operating an auxiliary power unit or generator set on 2007 and subsequent model year commercial vehicles once more emissions testing data is available.]*

Discussion: Some truck drivers stated that they received idling citations for operating their auxiliary power unit. They requested that the model law clarify that an idle reduction technology should not be considered an idling engine since its use is to reduce main engine idling. Based on EPA testing and engine certification levels, the emissions of a typical APU are less than a model year 2006 or older diesel vehicle so states should encourage and create financial incentives for the use of APUs on those trucks. As for 2007 and subsequent model year diesel vehicles, more information is needed to better understand how model year 2007 and subsequent engines perform under long duration idling conditions. However, one state provided information that APUs will emit more than 2007 and subsequent model year engines, and this state will require the APUs to meet a more stringent emission level.

The California Air Resources Board issued a regulation to amend Title 13 of the California Code of Regulations. This regulation states that on or after January 1, 2008, the truck drivers operating in California shall not operate an internal combustion auxiliary power system (APS) on any vehicle equipped with a 2007 and subsequent model year primary engine unless the vehicle is equipped with an APS meeting the emissions performance requirements, as follows:

a. Be equipped with a verified Level 3 in-use strategy for particulate matter control, or
b. Have its exhaust routed directly into the vehicle's exhaust pipe, upstream of the diesel particulate matter aftertreatment device.

Section H: PENALTIES: The owner and/or operator of a vehicle, and/or the owner of a load/unload location, that is in violation of this law is responsible for penalties as follows.

(1) First offense: Warning ticket issued to vehicle driver and owner, and where applicable, the load/unload facility owner.

(2) Second and subsequent offenses: $150 citation is issued to the vehicle driver; and/or, $500 citation issued to the registered vehicle owner or load/unload location owner.

Discussion: Participants felt a warning should first be given, especially if a state is beginning to enforce a state idling law. If the state has a long and well-established history of enforcement in this area, then the warning ticket may not be necessary. Workshop participants indicated that utilizing a warning ticket provides a good opportunity to educate the truck owner about the law and any state financing program, if available. As for the second and subsequent offenses, many states have their own protocol on issuing tickets, and the model language above simply represents some agreement by participants on the amounts. Some states felt the need to penalize the truck owner for a perceived economic gain in idling. Trucking industry participants expressed the desire that states understand that owner operators are less likely to absorb high fines and remain economically solvent, while larger companies could build in these fines as a cost of doing business.

III. MODEL STATE IDLING LAW

(a) PURPOSE: The purpose of this law is to protect public health and the environment by reducing emissions while conserving fuel and maintaining adequate rest and safety of all drivers of diesel vehicles.

(b) APPLICABILITY: This law applies to commercial diesel vehicles which are designed to operate on highways (as defined under 40 CFR 390.5), and to locations where commercial diesel vehicles load or unload (hereinafter referred to as "load/unload locations").

(c) GENERAL REQUIREMENT FOR LOAD/UNLOAD LOCATIONS: No load/unload location owner shall cause vehicles covered by this rule to idle for a period greater than 30 minutes while waiting to load or unload at a location under their control.

(d) GENERAL REQUIREMENT FOR VEHICLES: No owner or operator of a vehicle shall cause or permit vehicles covered by this rule to idle for more than 5 minutes in any 60 minute period except as noted in sections (e) and (f), and except as provided in section (c) in the case of a load/unload location.

(e) EXEMPTIONS: Section (d) does not apply for the period or periods where:

(1) a vehicle idles while forced to remain motionless because of on-highway traffic, an official traffic control device or signal, or at the direction of a law enforcement official.

(2) a vehicle idles when operating defrosters, heaters, air conditioners, or installing equipment solely to prevent a safety or health emergency, and not as part of a rest period.

(3) a police, fire, ambulance, public safety, military, other emergency or law enforcement vehicle, or any vehicle being used in an emergency capacity, idles while in an emergency or training mode and not for the convenience of the vehicle operator.

(4) the primary propulsion engine idles for maintenance, servicing, repairing, or diagnostic purposes if idling is required for such activity.

(5) a vehicle idles as part of a state or federal inspection to verify that all equipment is in good working order, provided idling is required as part of the inspection.

(6) idling of the primary propulsion engine is necessary to power work-related mechanical or electrical operations other than propulsion (e.g., mixing or processing cargo or straight truck refrigeration). This exemption does not apply when idling for cabin comfort or to operate non-essential on-board equipment.

(7) an armored vehicle idles when a person remains inside the vehicle to guard the contents, or while the vehicle is being loaded or unloaded.

(f) CONDITIONAL EXEMPTIONS: Subsection (d) does not apply for the period or periods where:

(1) a passenger bus idles a maximum of 15 minutes in any 60 minute period to maintain passenger comfort while non-driver passengers are onboard. The exemption expires (x) years after implementing a state financial assistance program for idle reduction technologies or strategies.

(2) an occupied vehicle with a sleeper berth compartment idles for purposes of air conditioning or heating during rest or sleep period, until (x) years after implementing a state financial assistance program for idle reduction technologies or strategies, whereupon this exemption expires.

(3) an occupied vehicle idles for purposes of air conditioning or heating while waiting to load or unload, until (x) years after implementing a state financial assistance program for idle reduction technologies or strategies, whereupon this exemption expires.

(4) a vehicle idles due to mechanical difficulties over which the driver has no control; PROVIDED that the vehicle owner submits the repair paperwork or product receipt (by mail; within (x) days) to the appropriate authority verifying that the mechanical problem has been fixed.

(g) AUXILIARY POWER UNITS: Operating an auxiliary power unit, generator set, or other mobile idle reduction technology as a means to heat, air condition, or provide electrical power as an alternative to idling the main engine is not an idling engine.

(1) operating an auxiliary power unit or generator set on all model year 2006 or older commercial diesel vehicles is permitted.

(2) *[reserved for sub- section on operating an auxiliary power unit or generator set on 2007 and subsequent model year commercial vehicles.]*

(h) PENALTIES: The owner and/or operator of a vehicle, and/or the owner of a load/unload location, that is in violation of this law is responsible for penalties as follows.

(1) First offense: warning ticket issued to vehicle driver and owner, and where applicable, the load/unload facility owner.

(2) Second and subsequent offenses: $150 citation is issued to the vehicle driver; and/or, $500 citation issued to the registered vehicle owner or load/unload location owner.

IV. FINANCIAL ASSISTANCE PROGRAMS

For virtually every trucking company, fuel is the second largest expense behind labor. Numerous technologies are currently available to help these companies reduce fuel consumption from idling; however one of the major barriers to their widespread adoption is a lack of investment capital. In order to increase compliance with state idle restriction laws, especially among small and medium-sized trucking companies, participants at EPA's workshops generally agreed that states should consider developing financial assistance programs aimed at providing capital to trucking companies for the purchase of idle reduction technologies. Opportunities for financial assistance programs include loan programs, performance contracting arrangements, and grants as listed below.

Loan Programs

- States could offer grants or loans with terms that are more attractive than currently available commercial loans (e.g., low-interest rates, flexible repayment terms). Some states have existing grant or loan programs through their small business or environmental offices that may be able to support idle reduction technologies, including:
    - Currently, at least two states, Arkansas and Minnesota, offer loans to small businesses for idle reduction technologies (AR: http://www.adeq.state.ar.us/poa/businessasst.htm and MN: http://www.pca.state.mn.us/programs/sbomb_loan.html).

- Another state, Oregon's Lane Regional Air Pollution Authority (LRAPA), provides low-cost lease-to-own or no-interest arrangements on auxiliary power units for truckers (http://www.lrapa.org).

- The State of Wisconsin recently created a grant program for diesel truck idling reduction units. This program is administered by the Wisconsin Department of Commerce and provides grants to freight motor carrier's newer truck tractors. The program is designed to award $1 million per year in grants for five years (http://www/legis.state.wi.us/ (click on "Wisconsin Law")).

- The State of California provides funds to support the incremental cost of cleaner diesel engines and equipment. Eligible projects include the installation costs for auxiliary power units (http://www.arb.ca.gov/msprog/moyer/moyer.htm).

- California Assembly Bill 1901 would establish a program, until January 1, 2012, in the State Energy Resources Conservation and Development Commission, to help finance, through direct loans, the retrofitting of trucks of large and small businesses with EPA SmartWay Upgrade Kits (includes idle reduction technology) that would be required to have specified emission control devices and may have other specified equipment. The Bill has been passed by Assembly Committee on Transportation and by the Assembly Committee on Jobs, Economic Development and the Economy. The Bill is currently with the Committee on Appropriations (http://www.aroundthecapitol.com/Bills/AB_1901).

- The State of Pennsylvania provides up to 50% matching grants, to a maximum of $7,500, to enable small Pennsylvania businesses to adopt or acquire energy efficient or pollution prevention equipment.

- The State of Washington Legislature recently passed a bill that would provide a tax credit from the retail sale, lease, or rental of auxiliary power to heavy-duty diesel vehicles through onboard auxiliary systems or stand along electrification systems (http://apps.leg.wa.gov/billinfo/summary.aspx?bill=6512#documents).

Performance Contracting Arrangements

- States or private institutions could consider setting up programs in which they provide idle reduction equipment to trucking companies with no up-front cost to the company. The company would then pay for the equipment by returning a portion of its savings from reduced fuel consumption to the state or private entity each month. This type of arrangement would eliminate the problem caused by lack of access to investment capital that is a problem for many small- and medium-sized trucking companies. EPA's SmartWay Transport Partnership is currently studying this type of program.

Department of Transportation Programs

- Congestion Mitigation and Air Quality (CMAQ) Improvement program provides funds to state Department of Transportations, metropolitan planning organizations, and transit agencies to invest in projects that reduce regulated criteria air pollutants from transportation-related sources. This program has funded several idle-reduction projects throughout the country and there are several applications pending for future CMAQ-funded idle-reduction projects (http://www.fhwa.dot.gov/environment/cmaqpgs/index.htm).

- Section 129 Loans allows states to use regular federal-aid highway apportionments to fund loans for projects with dedicated revenue streams (http://www.fhwa.dot.gov/innovativefinance/).

- State Infrastructure Banks provides revolving infrastructure investment funds for surface transportation projects that are established and administered by states (http://www.fhwa.dot.gov/innovativefinance/sib.htm).

- Transportation Infrastructure Finance and Innovation Act allows DOT to provide direct credit assistance to sponsors of major transportation projects (http://tifia.fhwa.dot.gov/).

ATTACHMENT C

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.			How many hours each year might you use an IR device?			What is the price of diesel fuel?				**Avoidable Idling Fuel Costs**	
1	0.8	gallons/hour	X	1,000	hours/year	X	$2.65	/gallon	=		$2,120.00	per year
							What is your average fuel economy?				"Miles" of idling	
2	0.8	gallons/hour	X	1,000	hours/year	X	6.1	miles/gallon	=		4880	miles
	How much does an oil change cost?			How many miles between oil changes?							**Preventive Maintenance Costs**	
3	$150	/oil change	÷	30,000	miles	=	$0.005	/mile	X	"miles"	=	$24.40 /year
	How much does an engine overhaul cost?			How many miles between overhauls?							**Overhaul Costs**	
4	$10,000	/overhaul	÷	500,000	miles	=	$0.02	/mile	X	"miles"	=	$97.60 /year
											Total Avoidable Idling Costs	
5										Sum	=	$2,242 /year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?			Hours of use			Fuel price			Fuel cost for IR device		
6	0.2	gallons/hour	X	1,000		X	$2.65		=	$530 /year		
				Maintenance cost for device						Fuel cost	**Operating Cost for On-board IR Device**	
7				$100	/year				+	$530	=	$630 /year
	Cost per hour to plug into EPS			Hours plugged into EPS			Cost to plug in			On-board operating cost		**Total IR Operating Cost**
8	$2.00	/hour	X	0	hours	=	$0		+	$630	=	$630 /year

Calculate Savings from Selected Idling Reduction Option

				Capital cost on-board IR device			**Savings** (line 5- line 8)			**Payback Time**	
9				$6,000		÷	$1,612 /year saved		=	3.7 years	

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.			How many hours each year might you use an IR device?			What is the price of diesel fuel?				**Avoidable Idling Fuel Costs**	
1	0.8	gallons/hour	X	1,000	hours/year	X	$2.65	/gallon	=		$2,120.00	per year
							What is your average fuel economy?				"Miles" of idling	
2	0.8	gallons/hour	X	1,000	hours/year	X	6.1	miles/gallon	=		4880	miles
	How much does an oil change cost?			How many miles between oil changes?							**Preventive Maintenance Costs**	
3	$150	/oil change	÷	30,000	miles	=	$0.005	/mile	X	"miles"	=	$24.40 /year
	How much does an engine overhaul cost?			How many miles between overhauls?							**Overhaul Costs**	
4	$10,000	/overhaul	÷	500,000	miles	=	$0.02	/mile	X	"miles"	=	$97.60 /year
											Total Avoidable Idling Costs	
5										Sum	=	$2,242 /year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?			Hours of use			Fuel price			Fuel cost for IR device		
6	0.2	gallons/hour	X	1,000		X	$2.65		=	$530 /year		
				Maintenance cost for device						Fuel cost	**Operating Cost for On-board IR Device**	
7				$100	/year				+	$530	=	$630 /year
	Cost per hour to plug into EPS			Hours plugged into EPS			Cost to plug in			On-board operating cost		**Total IR Operating Cost**
8	$2.00	/hour	X	0	hours	=	$0		+	$630	=	$630 /year

Calculate Savings from Selected Idling Reduction Option

				Capital cost on-board IR device			**Savings** (line 5- line 8)			**Payback Time**	
9				$9,000		÷	$1,612 /year saved		=	5.6 years	

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.			How many hours each year might you use an IR device?			What is the price of diesel fuel?				**Avoidable Idling Fuel Costs**
1	0.8	gallons/hour	X	1,500	hours/year	X	$2.65	/gallon	=	$3,180.00	per year
							What is your average fuel economy?				"Miles" of idling
2	0.8	gallons/hour	X	1,500	hours/year	X	6.1	miles/gallon	=	7320	miles
	How much does an oil change cost?			How many miles between oil changes?							**Preventive Maintenance Costs**
3	$150	/oil change	÷	30,000	miles	=	$0.005	/mile	X "miles"	=	$36.60 /year
	How much does an engine overhaul cost?			How many miles between overhauls?							**Overhaul Costs**
4	$10,000	/overhaul	÷	500,000	miles	=	$0.02	/mile	X "miles"	=	$146.40 /year
											Total Avoidable Idling Costs
5									Sum	=	$3,363 /year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?			Hours of use			Fuel price			Fuel cost for IR device	
6	0.2	gallons/hour	X	1,500		X	$2.65		=	$795 /year	
				Maintenance cost for device						Fuel cost	**Operating Cost for On-board IR Device**
7				$100	/year				+	$795	= $895 /year
	Cost per hour to plug into EPS			Hours plugged into EPS			Cost to plug in			On-board operating cost	**Total IR Operating Cost**
8	$2.00	/hour	X	0	hours	=	$0		+	$895	= $895 /year

Calculate Savings from Selected Idling Reduction Option

				Savings (line 5- line 8)			**Payback Time**
9	Capital cost on-board IR device $6,000	÷	$2,468 /year saved	=	2.4 years

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.			How many hours each year might you use an IR device?			What is the price of diesel fuel?				**Avoidable Idling Fuel Costs**
1	0.8	gallons/hour	X	1,500	hours/year	X	$2.65	/gallon	=	$3,180.00	per year
							What is your average fuel economy?				"Miles" of idling
2	0.8	gallons/hour	X	1,500	hours/year	X	6.1	miles/gallon	=	7320	miles
	How much does an oil change cost?			How many miles between oil changes?							**Preventive Maintenance Costs**
3	$150	/oil change	÷	30,000	miles	=	$0.005	/mile	X "miles"	=	$36.60 /year
	How much does an engine overhaul cost?			How many miles between overhauls?							**Overhaul Costs**
4	$10,000	/overhaul	÷	500,000	miles	=	$0.02	/mile	X "miles"	=	$146.40 /year
											Total Avoidable Idling Costs
5									Sum	=	$3,363 /year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?			Hours of use			Fuel price			Fuel cost for IR device	
6	0.2	gallons/hour	X	1,500		X	$2.65		=	$795 /year	
				Maintenance cost for device						Fuel cost	**Operating Cost for On-board IR Device**
7				$100	/year				+	$795	= $895 /year
	Cost per hour to plug into EPS			Hours plugged into EPS			Cost to plug in			On-board operating cost	**Total IR Operating Cost**
8	$2.00	/hour	X	0	hours	=	$0		+	$895	= $895 /year

Calculate Savings from Selected Idling Reduction Option

				Savings (line 5- line 8)			**Payback Time**
	Capital cost on-board IR device						
9	$9,000	÷		$2,468 /year saved		=	3.6 years

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.		How many hours each year might you use an IR device?		What is the price of diesel fuel?		**Avoidable Idling Fuel Costs**
1	0.8 gallons/hour	X	2,000 hours/year	X	$2.65 /gallon	=	$4,240.00 per year
2	0.8 gallons/hour	X	2,000 hours/year	X	What is your average fuel economy? 6.1 miles/gallon	=	"Miles" of idling 9760 miles
3	How much does an oil change cost? $150 /oil change	÷	How many miles between oil changes? 30,000 miles	=	$0.005 /mile	X "miles" =	**Preventive Maintenance Costs** $48.80 /year
4	How much does an engine overhaul cost? $10,000 /overhaul	÷	How many miles between overhauls? 500,000 miles	=	$0.02 /mile	X "miles" =	**Overhaul Costs** $195.20 /year
5					Sum	=	**Total Avoidable Idling Costs** $4,484 /year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?		Hours of use		Fuel price		Fuel cost for IR device	
6	0.2 gallons/hour	X	2,000	X	$2.65	=	$1,060 /year	
7			Maintenance cost for device $100 /year			+ Fuel cost $1,060	=	**Operating Cost for On-board IR Device** $1,160 /year
8	Cost per hour to plug into EPS $2.00 /hour	X	Hours plugged into EPS 0 hours	=	Cost to plug in $0	+ On-board operating cost $1,160	=	**Total IR Operating Cost** $1,160 /year

Calculate Savings from Selected Idling Reduction Option

			Capital cost on-board IR device		**Savings** (line 5- line 8)		**Payback Time**
9			$6,000	÷	$3,324 /year saved	=	1.8 years

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.		How many hours each year might you use an IR device?		What is the price of diesel fuel?		**Avoidable Idling Fuel Costs**
1	0.8 gallons/hour	X	2,000 hours/year	X	$2.65 /gallon	=	$4,240.00 per year
2	0.8 gallons/hour	X	2,000 hours/year	X	What is your average fuel economy? 6.1 miles/gallon	=	"Miles" of idling 9760 miles
3	How much does an oil change cost? $150 /oil change	÷	How many miles between oil changes? 30,000 miles	=	$0.005 /mile	X "miles" =	**Preventive Maintenance Costs** $48.80 /year
4	How much does an engine overhaul cost? $10,000 /overhaul	÷	How many miles between overhauls? 500,000 miles	=	$0.02 /mile	X "miles" =	**Overhaul Costs** $195.20 /year
5					Sum	=	**Total Avoidable Idling Costs** $4,484 /year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?		Hours of use		Fuel price		Fuel cost for IR device	
6	0.2 gallons/hour	X	2,000	X	$2.65	=	$1,060 /year	
7			Maintenance cost for device $100 /year			+ Fuel cost $1,060	=	**Operating Cost for On-board IR Device** $1,160 /year
8	Cost per hour to plug into EPS $2.00 /hour	X	Hours plugged into EPS 0 hours	=	Cost to plug in $0	+ On-board operating cost $1,160	=	**Total IR Operating Cost** $1,160 /year

Calculate Savings from Selected Idling Reduction Option

			Capital cost on-board IR device		**Savings** (line 5- line 8)		**Payback Time**
9			$9,000	÷	$3,324 /year saved	=	2.7 years

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.			How many hours each year might you use an IR device?			What is the price of diesel fuel?				**Avoidable Idling Fuel Costs**
1	0.8	gallons/hour	X	2,500	hours/year	X	$2.65	/gallon	=	$5,300.00	per year
							What is your average fuel economy?				"Miles" of idling
2	0.8	gallons/hour	X	2,500	hours/year	X	6.1	miles/gallon	=	12200	miles
	How much does an oil change cost?			How many miles between oil changes?							**Preventive Maintenance Costs**
3	$150	/oil change	÷	30,000	miles =	$0.005	/mile	X "miles"	=	$61.00	/year
	How much does an engine overhaul cost?			How many miles between overhauls?							**Overhaul Costs**
4	$10,000	/overhaul	÷	500,000	miles =	$0.02	/mile	X "miles"	=	$244.00	/year
											Total Avoidable Idling Costs
5								Sum	=	$5,605	/year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?			Hours of use			Fuel price			Fuel cost for IR device	
6	0.2	gallons/hour	X	2,500		X	$2.65		=	$1,325	/year
				Maintenance cost for device				Fuel cost		**Operating Cost for On-board IR Device**	
7				$100	/year			+ $1,325	=	$1,425	/year
	Cost per hour to plug into EPS			Hours plugged into EPS			Cost to plug in	On-board operating cost		**Total IR Operating Cost**	
8	$2.00	/hour	X	0	hours =		$0	+ $1,425	=	$1,425	/year

Calculate Savings from Selected Idling Reduction Option

				Savings (line 5- line 8)			**Payback Time**
	Capital cost on-board IR device						
9	$6,000	÷		$4,180	/year saved	=	1.4 years

How Much Could You Save by Idling Less?

Instructions: Fill in the blue cells with information about your costs.

You may change any of the items in blue cells or use the defaults entered.

Calculate Costs for Idling that Can Be Avoided

	How much fuel is used for idling? You may consult the table below.		How many hours each year might you use an IR device?		What is the price of diesel fuel?			**Avoidable Idling Fuel Costs**	
1	0.8	gallons/hour	X	2,500	hours/year	X	$2.65	/gallon	=	$5,300.00	per year
					What is your average fuel economy?			"Miles" of idling	
2	0.8	gallons/hour	X	2,500	hours/year	X	6.1	miles/gallon	=	12200	miles
	How much does an oil change cost?		How many miles between oil changes?						**Preventive Maintenance Costs**		
3	$150	/oil change	÷	30,000	miles =	$0.005	/mile	X "miles"	=	$61.00	/year
	How much does an engine overhaul cost?		How many miles between overhauls?						**Overhaul Costs**		
4	$10,000	/overhaul	÷	500,000	miles =	$0.02	/mile	X "miles"	=	$244.00	/year
									Total Avoidable Idling Costs		
5								Sum	=	$5,605	/year

Calculate Costs for Idling Reduction Options

Go to line 6 for onboard options or line 8 for electrified parking space.

	How much fuel is used by the IR device?		Hours of use		Fuel price		Fuel cost for IR device				
6	0.2	gallons/hour	X	2,500	X	$2.65	=	$1,325	/year		
			Maintenance cost for device				Fuel cost		**Operating Cost for On-board IR Device**		
7			$100	/year			+	$1,325	=	$1,425	/year
	Cost per hour to plug into EPS		Hours plugged into EPS		Cost to plug in		On-board operating cost		**Total IR Operating Cost**		
8	$2.00	/hour	X	0	hours =	$0	+	$1,425	=	$1,425	/year

Calculate Savings from Selected Idling Reduction Option

		Capital cost on-board IR device		**Savings** (line 5- line 8)			**Payback Time**	
9		$9,000	÷	$4,180	/year saved	=	2.2	years